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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/544,128

08/02/2005

Trevor Burbridge

36-1916

8580

23117 7590 10/14/2009
NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

BENOIT, ESTHER

ART UNIT

PAPER NUMBER

2442

MAIL DATE

DELIVERY MODE

10/14/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/544,128	Applicant(s) BURBRIDGE ET AL.	
	Examiner ESTHER BENOIT	Art Unit 2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendments

1. Claims 1-15 are pending in this application.

Response to Arguments

2. Applicant's arguments, filed 06/02/2009, have been fully considered but they are not persuasive. The applicants are arguing in substance the following:

Arguments under 35 U.S.C. 103 (a)

Arguments to Claim 1:

- a) The prior arts Friedman and Liu alone or in combination, do not disclose counting responses in order to track the audience size.
- b) The prior art Friedman does not teach forecasting a value for an upper bound on the number of receivers.

Response to arguments of Claim 1:

As to point a, the argument has been considered but is not persuasive. On page 965, Col. 1, paragraph 5, "Given the need...", Friedman discusses a probabilistic polling method as well as RTP, wherein RTP counts the number of replies to determine a number of receivers.

As to point b, the argument has been considered but is not persuasive. The Examiner references pg. 954, Col. 1 to pg. 956, Col. 1, where the prior art Liu teaches a

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closed-form approach in estimating an upper and lower bound of receivers based on the initial arrivals of responses of these receivers.

As to any claims not specifically discussed, the applicants argued that it was patentable for one of the reasons discussed above. Please see response to above arguments for unspecified discussions.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being anticipated by Friedman (*Multicast Session Membership Size Estimation*, March 1999) , in view of Liu et al. (Broadcast Audience Estimation, 2000)

With respect to claim 1, Friedman discloses transmitting to receivers receiving the multicast a plurality of requests each including a probability parameter, whereby each terminal replies or not with a corresponding probability (pg. 965, Col. 1, paragraph 5, lines 2-6); counting the number (r) of replies to each request (pg. 972, Col. 1, paragraph 5, lines 5-8); determining, from the counts and parameters, estimates of the

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number of receivers (pg. 966, Col. 1, paragraph 2, "We model...", lines 1-8); filtering the estimates (pg. 969, Col. 1, paragraph 1, "Yajnik et al.'s...", lines 6-8); determining therefrom a probability parameter such that the risk that the number of replies exceeds a predefined threshold is kept below a predefined value (pg. 968, Col. 1, Section D. "Upper Bound on Polling Probability")

Friedman does not explicitly teach accommodating a dynamic audience size by computing a new probability parameter to be included, by forecasting from the counts and parameters, an upper bound for the number of receivers and repeating the method to provide successive outputs representing estimates of the then current size of the multicast audience.

However, Liu discloses accommodating a dynamic audience size by computing a new probability parameter to be included, by forecasting from the counts and parameters, an upper bound for the number of receivers repeating the method to provide successive outputs representing estimates of the then current size of the multicast audience (pg. 955, paragraph 1, "The maximum likelihood..." to pg. 956, Col. 1, paragraph 2, "The Poisson approximation...", *with an emphasis on pg. 956, Col. 1, paragraph 2, in order to show accommodation for estimating a dynamic audience size*)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Friedman to incorporate the teachings of Liu to set an upper bound for the number of audience members *because* this will allow the broadcast industry to better predict the size of the audience by setting

an upper threshold and adjusting that bound to accommodate the calculated audience size. Estimating audience size is good for feedback control in the broadcast industry.

With respect to claim 2, Friedman discloses estimating the maximum audience size corresponding to a predetermined probability of receiving a number of replies equal to that observed, given the probability parameter used; (pg. 969, Col. 2, paragraph 1, “Our algorithm...”) performing said forecasting using said estimated maximum audience size and at least one previous value of said maximum audience size; determining the new probability parameter ($P(t.sub.i+1)$) that, with the forecast maximum size, would involve the risk of the number of replies exceeding the capacity available to receive them falling below a predetermined risk threshold (pg. 968, Col. 1, Section D., paragraph 1)

With respect to claim 3, Friedman discloses a method including generating a filtered version of the estimated maximum sizes, prior to said forecasting (pg. 969, Col. 1, paragraph 1, “Yajnik et al.’s...”, lines 6-8)

With respect to claim 4, Friedman discloses a method in which the filtering of the estimated maximum sizes is performed by a Wiener filter (pg. 969, Col. 1, paragraph 1, “Yajnik et al.’s...”, lines 6-8)

With respect to claim 5, Friedman discloses a method including adaptively adjusting the parameters of said filtering of the estimated maximum sizes in dependence on the power spectrum of the estimates (pg. 970, Col. 2, paragraph 2, “This section...”, lines 9-11)

With respect to claim 6, Friedman discloses a method in which the forecasting is performed by extrapolating past values of the estimated maximum size (pg. 970, Col. 2, paragraph 2, "This section...", lines 9-11)

With respect to claim 7, Friedman discloses a method in which said filtering of the estimates is performed by a Wiener filter (pg. 969, Col. 1, paragraph 1, "Yajnik et al.'s...", lines 6-8)

With respect to claim 8, Friedman discloses a method including adaptively adjusting the parameters of said filtering of the estimates as a function of the power spectrum of past values of the estimates (pg. 970, Col. 2, paragraph 2, "This section...", lines 9-11)

With respect to claim 9, Friedman discloses a method in which said filtering of the estimates is performed after ceasing to determine said estimates (pg. 969, Col. 1, paragraph 1, "Yajnik et al.'s...", lines 6-8)

With respect to claim 10, Friedman discloses a method in which said filtering of the estimates is performed each time a new estimate is determined (pg. 969, Col. 1, paragraph 1, "Yajnik et al.'s...", lines 6-8)

With respect to claim 11, Friedman discloses a method in which said filtering of the estimates is performed each time a new estimate is determined and in which the same filter parameters are used for the filtering of the estimates and the filtering of the maximum estimated sizes (pg. 969, Col. 1, paragraph 1, "Yajnik et al.'s...", lines 6-8)

With respect to claim 12, Friedman discloses a method including measuring the probability of loss of requests or replies and applying a correction to the first estimated size (pg. 968, Col. 2, Section F., Paragraph 2, lines 11-13)

With respect to claim 13, Friedman discloses transmitting to receivers receiving the multicast a plurality of requests each including a probability parameter (P), each terminal replying or not with a corresponding probability (pg. 965, Col. 1, paragraph 5, lines 2-6); counting the number (r) of replies to each request (pg. 972, Col. 1, paragraph 5, lines 5-8); determining from the count a probability parameter to be included in a subsequent step (pg. 968, Col. 1, Section D. "Upper Bound on Polling Probability")

Friedman does not explicitly teach accommodating a dynamic audience size by computing a new probability parameter and repeating the method to provide successive outputs representing estimates of the then current size of the multicast audience.

However, Liu discloses accommodating a dynamic audience size by computing a new probability parameter and repeating the method to provide successive outputs representing estimates of the then current size of the multicast audience (pg. 955, paragraph 1, "The maximum likelihood..." to pg. 956, Col. 1, paragraph 2, "The Poisson approximation...", *with an emphasis on pg. 956, Col. 1, paragraph 2, in order to show accommodation for estimating a dynamic audience size*)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Friedman to incorporate the teachings of Liu to compute a new probability parameter *because* this will allow the

broadcast industry to better predict the size of the audience. Estimating audience size is good for feedback control in the broadcast industry.

With respect to claim 14, Friedman discloses transmitting to receivers receiving a multicast, a plurality of requests, each request including a probability parameter (P), each terminal replying or not with a corresponding probability (pg. 965, Col. 1, paragraph 5, lines 2-6); counting the number (r) of replies to each request; (pg. 972, Col. 1, paragraph 5, lines 5-8) determining, from the counts and parameters, estimates of the number of receivers (pg. 966, Col. 1, paragraph 2, “We model...”, lines 1-8); filtering the estimates (pg. 969, Col. 1, paragraph 1, “Yajnik et al.’s...”, lines 6-8); determining therefrom a probability parameter such that the risk that the number of replies exceeds a predefined threshold is kept below a predefined value (pg. 968, Col. 1, Section D. “Upper Bound on Polling Probability”)

Friedman does not explicitly teach accommodating a dynamic audience size by computing a new probability parameter to be included, by forecasting from the counts and parameters, an upper bound for the number of receivers and repeating the method to provide successive outputs representing estimates of the then current size of the multicast audience.

However, Liu discloses accommodating a dynamic audience size by computing a new probability parameter to be included, by forecasting from the counts and parameters, an upper bound for the number of receivers repeating the method to provide successive outputs representing estimates of the then current size of the

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multicast audience (pg. 955, paragraph 1, “The maximum likelihood...” to pg. 956, Col. 1, paragraph 2, “The Poisson approximation...”, *with an emphasis on pg. 956, Col. 1, paragraph 2, in order to show accommodation for estimating a dynamic audience size*)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Friedman to incorporate the teachings of Liu to set an upper bound for the number of audience members *because* this will allow the broadcast industry to better predict the size of the audience by setting an upper threshold and adjusting that bound to accommodate the calculated audience size. Estimating audience size is good for feedback control in the broadcast industry.

With respect to claim 15, Friedman discloses transmitting to receivers receiving the multicast a plurality of requests each request including a probability parameter (P), whereby each terminal replies or not with a corresponding probability (pg. 965, Col. 1, paragraph 5, lines 2-6); counting the number (r) of replies to each request (pg. 972, Col. 1, paragraph 5, lines 5-8); determining, from the counts and parameters, estimates of the number of receivers (pg. 966, Col. 1, paragraph 2, “We model...”, lines 1-8); filtering the estimates (pg. 969, Col. 1, paragraph 1, “Yajnik et al.’s...”, lines 6-8); including adaptively adjusting the parameters of said filtering of the estimates as a function of the power spectrum of past values of the estimates (pg. 970, Col. 2, paragraph 2, “This section...”, lines 9-11)

Friedman does not explicitly teach repeating the method to provide successive outputs representing estimates of the then current size of the multicast audience.

However, Liu discloses successive outputs representing estimates of the then current size of the multicast audience (pg. 955, paragraph 1, “The maximum likelihood...” to pg. 956, Col. 1, paragraph 2, “The Poisson approximation...”, *with an emphasis on pg. 956, Col. 1, paragraph 2, in order to show accommodation for estimating a dynamic audience size*)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Friedman to incorporate the teachings of Liu to use successive outputs to estimate the dynamic audience size *because* this will allow the broadcast industry to better predict the size of the audience and adjust the future audience size predictions. Estimating audience size is good for feedback control in the broadcast industry.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Esther Benoit whose telephone number is 571-270-3807. The examiner can normally be reached on Monday through Friday between 7:30 a.m and 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

E.B.

October 5, 2009

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Supervisory Patent Examiner, Art Unit 2455